

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph on page 6, line 15 with the following:

FIGS. 14A and 14B ~~FIG. 14~~ is illustrate a perspective view of an unassembled integrated optical sensor with first module and second module in accordance with an embodiment.

Please replace the paragraph on page 21, line 17 with the following:

The ring resonator embodiments like those of FIGS. 7-8 may be formed integral to a substrate, thereby providing a unitary structure protecting the resonator and waveguides from damage. An exemplary integrated optical sensor 500 is shown (unassembled) in ~~FIG. 14~~ FIGS. 14A and 14B having a first module 502 and a second module 504. The first module 502 includes a ring resonator 506 formed using an implantation, an etch and growth, or other suitable processes. In a preferred embodiment, the substrate 508 is formed of sapphire and the ring resonator 506 is formed of gallium arsenide or polysilicon which have higher indices of refraction than sapphire and thus provide total internal reflection. A primary waveguide 510 and a secondary waveguide 512, similar to the waveguides described above with respect to FIG. 8, have also been formed in the substrate 508. The waveguides 510 and 512 and the ring resonator 506 have top surfaces flush with the top surface 514 of the substrate 508. Signals propagating with the waveguides 510 and 512, as well as the ring resonator 506, do so under total internal reflection.

Please replace the paragraph on page 22, line 1 with the following:

The module 504 is formed of a substrate 516 which in the preferred embodiment would be the same material as that of substrate 508. Module 504 includes a cavity 518 defining a variable gap. As with the cavity 166 previously described, the cavity 518 has a geometry such that the gap of the cavity 518 will vary in response to changes to a measurable parameter, like pressure, force or temperature. Furthermore, while a rectilinear shape is shown in ~~FIG. 14~~ FIGS. 14A and 14B, it will be understood that other shapes are suitable; for example, a non-

planar shape may be used. The integrated optical sensor 500 is formed by mounting module 504 on module 502 forming the structure shown in FIG. 15.